Cambridge Assessment International Education

Syllabus

Cambridge O Level

For centres in Brunei

Geography 2230

Use this syllabus for exams in 2022, 2023 and 2024.
Exams are available in the June and November series.

Version 1

Cambridge Pathway

Why choose Cambridge International?

Cambridge International prepares school students for life, helping them develop an informed curiosity and a lasting passion for learning. We are part of the University of Cambridge.

Our Cambridge Pathway gives students a clear path for educational success from age 5 to 19. Schools can shape the curriculum around how they want students to learn – with a wide range of subjects and flexible ways to offer them. It helps students discover new abilities and a wider world, and gives them the skills they need for life, so they can achieve at school, university and work.

Our programmes and qualifications set the global standard for international education. They are created by subject experts, rooted in academic rigour and reflect the latest educational research. They provide a strong platform for learners to progress from one stage to the next, and are well supported by teaching and learning resources.

Our mission is to provide educational benefit through provision of international programmes and qualifications for school education and to be the world leader in this field. Together with schools, we develop Cambridge learners who are confident, responsible, reflective, innovative and engaged – equipped for success in the modern world.

Every year, nearly a million Cambridge students from 10 000 schools in 160 countries prepare for their future with the Cambridge Pathway.

'We think the Cambridge curriculum is superb preparation for university.'

Christoph Guttentag, Dean of Undergraduate Admissions, Duke University, USA

Quality management

Cambridge International is committed to providing exceptional quality. In line with this commitment, our quality management system for the provision of international qualifications and education programmes for students aged 5 to 19 is independently certified as meeting the internationally recognised standard, ISO 9001:2015. Learn more at **www.cambridgeinternational.org/ISO9001**

Contents

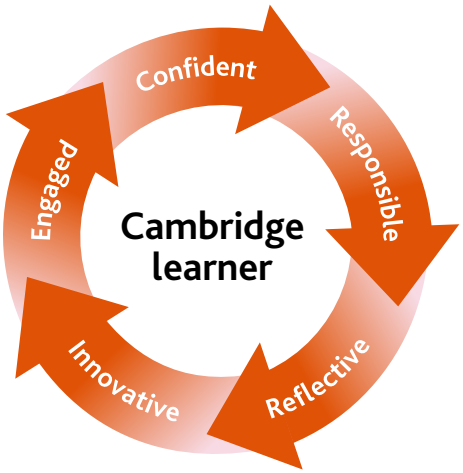
Changes to this syllabus

The latest syllabus is version 1, published September 2019.
There are no significant changes which affect teaching.

1 Why choose this syllabus?

Key benefits

Cambridge O Level is typically for 14 to 16 year olds and is an internationally recognised qualification. It has been designed especially for an international market and is sensitive to the needs of different countries. Cambridge O Level is designed for learners whose first language may not be English, and this is acknowledged throughout the examination process.



Our programmes balance a thorough knowledge and understanding of a subject and help to develop the skills learners need for their next steps in education or employment.

Cambridge O Level Geography develops lifelong skills, including:

- an understanding of the processes which affect physical and human environments
- an understanding of place on a local, regional and global scale
- the ability to use and understand geographical data and information
- an understanding of how communities around the world are affected and constrained by different environments.

Our approach in Cambridge O Level Geography encourages learners to be:

confident, in using geographical data to interpret the world around them

responsible, and aware of the duty present and future generations have in creating sustainable solutions to global issues

reflective, considering the similarities and differences between different environments, communities and economies

innovative, by encouraging and being open to resourceful, technological solutions to geographical issues

engaged, with geographical issues, ideas and solutions that will have positive long-term impacts on the physical and human environment.

'Cambridge O Level has helped me develop thinking and analytical skills which will go a long way in helping me with advanced studies.'

Kamal Khan Virk, former student at Beaconhouse Garden Town Secondary School, Pakistan, who went on to study Actuarial Science at the London School of Economics

International recognition and acceptance

Our expertise in curriculum, teaching and learning, and assessment is the basis for the recognition of our programmes and qualifications around the world. The combination of knowledge and skills in Cambridge O Level Geography gives learners a solid foundation for further study. Candidates who achieve grades A* to C are well prepared to follow a wide range of courses including Cambridge International AS & A Level Geography.

Cambridge O Levels are accepted and valued by leading universities and employers around the world as evidence of academic achievement. Many universities require a combination of Cambridge International AS & A Levels and Cambridge O Levels or equivalent to meet their entry requirements.

Learn more at **www.cambridgeinternational.org/recognition**

Cambridge Assessment International Education is an education organisation and politically neutral. The content of this syllabus, examination papers and associated materials do not endorse any political view. We endeavour to treat all aspects of the exam process neutrally.

Supporting teachers

We offer a wide range of practical and innovative support to help teachers plan and deliver our programmes and qualifications confidently.

Please see the syllabus materials DVD for access to resources.

Support for Cambridge O Level

Teaching resources

- Syllabuses
- Schemes of work
- Learner guides
- Discussion forums
- Endorsed resources

Exam preparation resources

- Question papers
- Mark schemes
- Example candidate responses to understand what examiners are looking for at key grades
- Examiner reports to improve future teaching

Training

- Introductory – face-to-face or online
- Extension – face-to-face or online
- Enrichment – face-to-face or online
- Coursework – online

Community

You can find useful information, as well as share your ideas and experiences with other teachers.

Find out more at the School Support Hub
www.cambridgeinternational.org/support

2 Syllabus overview

Aims

The aims describe the purposes of a course based on this syllabus.

The aims are to enable students to develop:

- an understanding of location on a local, regional and global scale
- an awareness of the characteristics, distribution and processes affecting contrasting physical and human environments
- an awareness of the geography of Brunei and its interactions with other countries and organisations
- an understanding of the ways in which people interact with each other and with their environment
- an awareness of the contrasting opportunities and constraints presented by different environments
- an appreciation of and concern for the environment
- an appreciation of the earth including its people, places, landscapes, natural processes and phenomena.

Geography by its nature is a practical subject. Wherever possible, students should pursue a fully integrated course which allows them to develop their practical skills by carrying out fieldwork and geographical investigations within the study of the subject content.

It may not always be possible to do fieldwork but some practical experience, however limited, is desirable in preparation for further study of geography.

Content overview

The syllabus is divided into three themes:

Theme 1: Population and settlement

Theme 2: The natural environment

Theme 3: Economic development.

The themes are designed to develop an understanding of natural and human environments.

Topics in these themes are used as the basis for questions in both Paper 1 Geographical Themes and Paper 2 Geographical Skills.

We recommend that you integrate the teaching of geographical enquiry and skills into the teaching of the appropriate themes.

Further information on the skills candidates should be able to demonstrate in the assessment are listed in section 4 Details of the assessment.

Assessment overview

All candidates take two components. Candidates will be eligible for grades A* to E.

All candidates take:

Paper 1 2 hours
Geographical Themes 60%

75 marks, weighted to 90 marks

Candidates answer three questions, each worth 25 marks. Candidates must answer one question from each theme.

Externally assessed

and:

Paper 2 1 hour 45 minutes
Geographical Skills 40%

60 marks

Candidates answer all the questions.

Externally assessed

Support for Cambridge O Level Geography

The School Support Hub is our secure online site for Cambridge teachers where you can find the resources you need to deliver our programmes, including schemes of work, past papers, mark schemes and examiner reports. You can also keep up to date with your subject and the global Cambridge community through our online discussion forums.

This O Level syllabus shares content with other IGCSE™ and O Level Geography syllabuses. For further support see the School Support Hub for IGCSE Geography (0460) and O Level Geography (2217).

www.cambridgeinternational.org/support

Assessment objectives

The assessment objectives (AOs) are:

AO1 Knowledge with understanding

Candidates should be able to:

- recall specific facts and demonstrate locational knowledge across a range of scales from local to global
- show an understanding of geographical concepts and processes in different environments and contexts
- explain the interaction of physical and human geography
- show an awareness of the spatial patterns of physical and human geography
- describe and explain how physical and human environments change over time and from place to place.

AO2 Skills and analysis

Candidates should be able to:

- interpret and analyse geographical data
- use and apply geographical knowledge and understanding to maps and in numerical, diagrammatic, pictorial, photographic and graphical form
- use geographical data to recognise patterns in such data and to deduce relationships
- select and show understanding of techniques for observing and collecting data
- select and use techniques for organising and presenting data.

AO3 Judgement and decision-making

Candidates should be able to:

- make reasoned judgements, decisions and conclusions
- evaluate solutions to environmental, social and economic problems
- show an awareness of the part played by the different attitudes and values of individuals and groups, in the processes of evaluation and decision-making
- appreciate the limitations of geographical evidence and explanations.

Weighting for assessment objectives

The approximate weightings allocated to each of the assessment objectives (AOs) are summarised below.

Assessment objectives as a percentage of the qualification

Assessment objective	Weighting in O Level %
AO1 Knowledge with understanding	40
AO2 Skills and analysis	45
AO3 Judgement and decision-making	15
Total	100

Assessment objectives as a percentage of each component

Assessment objective	Weighting in components %	
	Paper 1	**Paper 2**
AO1 Knowledge with understanding	55	10
AO2 Skills and analysis	25	80
AO3 Judgement and decision-making	20	10
Total	100	100

3 Subject content

The subject content is arranged into the three themes:

Theme 1: Population and settlement

Theme 2: The natural environment

Theme 3: Economic development.

The content listed in this section is assessed in Paper 1 – Geographical Themes. The context of questions for Paper 2 – Geographical Skills will also be taken from these themes and where there is a specific skill associated with a topic we have listed it in the Further guidance (for example 'Compare population pyramids').

Information on the geographical investigation of Settlements and services, Rivers and Tourism is listed as a topic within the subject content to show how the enquiry skills relate to the specific topic for enquiry in each theme.

More information on the required skills for mapwork and skills of interpreting diagrams, graphs and other types of geographical data is in the Details of the assessment for Paper 2 – Geographical Skills.

We recommend that you integrate the teaching of geographical enquiry and skills into the teaching of the appropriate themes.

The Further guidance column provides information on what we expect you to cover in each topic. Where examples are used we expect students to know about all the examples listed. This should not limit you, and where we have used the words 'including' we encourage the addition of different examples where they are particularly relevant, topical or you have a good example.

Resources

Some questions in all the written papers are based on resource material, such as photographs, map extracts, satellite images, drawings, diagrams, graphs, text extracts, statistics and tables of data.

To meet the aims of an international syllabus and examination, resource materials come from various areas of the world. Candidates may not be familiar with the world areas used in the resources. The questions **do not** require specific regional knowledge. The resources are designed to prompt candidates to use the general principles they have studied.

The units used in all resources and papers are:

- metres (m) and kilometres (km) for height and distance
- degrees Celsius (°C) for temperature
- US dollars (US$) for economic data.

Questions in all papers may include references to latitude or longitude.

Some map extracts may have heights stated in feet.

Case studies

These do not need to be additional content and can be delivered through the teaching of the content for topics.

Where a case study is specified in a topic, you should choose a suitable example to illustrate the subject content. For example, Topic 1.3.2 requires a case study of an urban area. The case study can be from anywhere in the world but it must illustrate the requirements detailed in the Further guidance column.

You can choose more than one case study for a topic. For example, for Topic 2.2.5 you could choose river X for a case study on a flood and river Y for a case study on management strategies.

You can also use the same case study for more than one topic as long as it is suitable for the subject content.

Where possible, case studies should be dated no earlier than 1980. Case studies from within the lifetime of the student are likely to be the most relevant and engaging.

Theme 1: Population and settlement

The content listed is exhaustive except where the word 'including' is used. Where 'including' is used, candidates must study everything in the list but may also study other relevant aspects.

1.1 Population

1.1.1 Growth of world population

Content:	Further guidance
The rapid growth in the world's population	Birth rates and death rates affecting natural increase
The reasons for different birth rates and death rates	Impacts of social, economic and other factors (including HIV/AIDS) on birth rates and death rates
The strategies used to control the rate of population growth and their effectiveness	The effect of government policies (including 'One-child policy' in China and 'Three or more policy' in Singapore)
Overpopulation, underpopulation and population density	Causes and consequences of overpopulation, underpopulation and density through the relationship between population, resources and level of technology used to exploit them

1.1.2 Migration

Content:	Further guidance
Population migration	Push and pull factors influencing internal migration (including rural–urban) and international migration (including voluntary and involuntary)
The impacts of migration	Positive and negative impacts on the destination and origin countries
Case study required for 1.1.2 Migration	
• An international migration	Study of one international migration (including destination and origin countries, causes of the migration, impacts on both destination and origin countries)

1.1.3 Population structure

Content:	Further guidance
Different types of population structure	Different population pyramids (including expansive, stationary and constrictive)
How population structure changes as countries progress through stages of development	Compare population pyramids (age/sex structure diagrams) for countries at different levels of development (including LICs (low income countries), MICs (middle income countries) and HICs (high income countries))

1.1.4 Quality of life

Content:	Further guidance
Indicators that assess the level of development of a country and how they are used	Social and economic measures (including Gross National Income [GNI] per capita, literacy, life expectancy) and composite indices (including Human Development Index [HDI])
The differences in the quality of life in LICs/MICs (low and middle income countries) and HICs (high income countries)	Reasons for differences in quality of life (historic, physical, economic, social, political)
The strategies used to improve the quality of life in LICs (low income countries) and their effectiveness	Strategies used (including international agreements and international organisations)
The quality of life in Brunei	Reasons for the quality of life in Brunei (HIC) compared with that in LICs/MICs (low and middle income countries)

1.2 Food

1.2.1 Food production in Brunei

Content:	Further guidance
Agricultural production in Brunei	Physical and human reasons for a shortage of home-produced food and difficulties faced by farmers
The strategies used to increase agricultural production in Brunei and their effectiveness	Strategies (including Research and Development [R&D], high-tech, livestock breeding, commercial farming, Agriculture and Agrifood Department)
The distribution of the main fishing areas in Brunei	Inland and marine fishing areas
The factors affecting the location and development of the fishing industry in Brunei	Physical factors and human factors affecting location and development
The importance of the fishing industry in Brunei	Contribution of fishing and fish farming (aquaculture) to the economy and people of Brunei (including commercial value, jobs, food)
The challenges facing the fishing industry in Brunei	Challenges (including increasing production and sustainability)

1.2.2 Rice farming in Southeast Asia

Content:	Further guidance
The distribution of rice farming in Southeast Asia	Physical factors and economic factors influencing rice farming in Southeast Asia
Methods of rice farming in Southeast Asia	Small-scale subsistence and large-scale commercial rice farming in Southeast Asia
The importance of rice farming in Southeast Asia	Contribution of rice farming to the economies and people of Southeast Asia (including commercial value, jobs, food)

Case study required for 1.2.2 Rice farming in Southeast Asia

• An area in Southeast Asia where rice farming is important	Study of one rice farming area in Southeast Asia (including location, changes in rice production, method[s] of rice farming used, management strategies used to increase rice production)

1.3 Settlement

1.3.1 Site and situation

Content:	Further guidance
How site and situation may influence the growth of settlements	Influence of site factors (including relief, soil, water supply, building materials) Influence of physical situation factors (including hills, valleys and rivers) and economic factors (including links to other settlements and communications)

1.3.2 Urban land use

Content:	Further guidance
The distribution of land use zones in cities	Compare urban land use zones (including Central Business District [CBD], residential areas, industrial areas, open space) in LICs/MICs (low and middle income countries) and HICs (high income countries)
The changes that have taken place in urban areas	Changes in urban areas (including regeneration, brownfield sites, urban fringe developments)

Case study required for 1.3.2 Urban land use

• Land use in an urban area	Study of one urban area (including location, changes in land use, the effect of the land use changes on the urban area)

1.3.3 Geographical investigation of settlements and services

Candidates should be able to:	Further guidance
Identify a suitable geographical question for investigation and outline the aims of the investigation	For example, how does a settlement change with increasing distance from the centre to the urban fringe? Investigate one change for example, open space, building height, number of people or vehicles, cost of land, type of land use
Demonstrate an understanding of the different methods which can be used to collect primary and secondary data	Gather data from maps, photographs, published data. Collect information by observation, counts, measurements and questionnaires for sample areas at different distances
Explain and demonstrate a variety of data presentation skills	Present findings in photographs, sketches, diagrams, graphs (bar, pie and scatter), tables and maps
Apply geographical knowledge and understanding to analyse and interpret data	Describe trends in the findings and any anomalies that do not fit the trends
Use evidence and geographical concepts to reach a conclusion	For any trends identified, explain them in terms of theories about urban areas. How far do they agree with expectations and how can any exceptions be accounted for?
Evaluate the outcomes of a geographical investigation and make suggestions on how it could be improved	What problems in collecting data or presenting the data might occur? What steps could be taken to overcome these?

1.3.4 Urban growth and change

Content:	Further guidance
The reasons for urbanisation	Reasons for urbanisation (including rural-urban migration and natural increase)
The problems associated with urban growth	Problems associated with urban growth (including unemployment, poor living conditions, informal settlements, traffic congestion, urban sprawl, environmental concerns)
The strategies used to overcome problems in urban areas	Strategies used (including traffic management, housing policies, air pollution control)
The reasons for and effects of counter-urbanisation	Reasons for (including affluence, mobility, environment) and effects of counter-urbanisation on urban areas and rural areas (including physical, social, economic)
Case study required for 1.3.4 Urban growth and change	
• A rapidly growing city in Southeast Asia	Study of one rapidly growing city in Southeast Asia (including location, reasons for rapid growth, the effect of this growth on people and the environment within the city)

Theme 2: The natural environment

The content listed is exhaustive except where the word 'including' is used. Where 'including' is used, candidates must study everything in the list but may also study other relevant aspects.

2.1 Plate tectonics, volcanoes and earthquakes

2.1.1 Plate tectonics

Content:	Further guidance
The terms plate and plate boundary	Structure of the earth (including mantle, continental crust, oceanic crust)
The major plates and their boundaries	Major plates (including North American, South American, Eurasian, African, Indo–Australian, Pacific, Antarctic)
The movement of plates	Theories of plate movement (including mantle convection currents, slab pull, ridge push)
The different types of plate boundaries	Types of plate boundaries (divergent/constructive, convergent/destructive and transform/conservative)
Features associated with plate boundaries	Features at plate boundaries (including fold mountains, mid-oceanic ridge, subduction zone, ocean trench)

2.1.2 Volcanoes

Content:	Further guidance
The distribution of volcanoes	Distribution and causes of volcanoes, plate boundaries (including Pacific Ring of Fire)
The main types and features of volcanoes	Types of volcanoes (including strato-volcanoes [composite cone] and shield volcano) Features of volcanoes (including crater, vent, magma chamber)
The factors affecting the impact of volcanoes	Factors affecting the impact of volcanoes on people and the environment (including types of volcanic eruption, types of volcanic products, geographical location, prediction, evacuation plans) Short-term impacts (including primary and secondary impacts) and long-term impacts (including effects on people and the economy)
How volcanic activity may have positive impacts	Positive impacts (including soils, minerals, geothermal power, domestic heating, tourism, health spas)

Case study required for 2.1.2 Volcanoes

• A volcanic eruption and its impact on people and the environment	Study of one major volcanic eruption (including location, causes, impacts on people and the environment, management strategies used to mitigate effects)

2.1.3 Earthquakes

Content:	Further guidance
The distribution of earthquakes	Distribution and causes of earthquakes in relation to plate boundaries and major fault lines
The main features of earthquakes and how their magnitude and intensity can be measured	Features of earthquakes (including epicentre, focus, shock waves, aftershocks, tremors, tsunami) Measurement of earthquakes (Richter and Mercalli scales)
The factors affecting the impact of earthquakes and tsunami on people and the environment	Factors affecting the impact (including distance from epicentre, depth of focus, type of soil, population density and time of day) Short-term impacts (including primary and secondary impacts) and long-term impacts (including effects on people and the economy)
The strategies used to reduce the impact of earthquakes and their effectiveness	Strategies (including building and infrastructure design, education, monitoring, warning systems, drills)
Case study required for 2.1.3 Earthquakes	
• An earthquake and its impact on people and the environment	Study of one major earthquake (including location, causes, impacts on people and the environment, management strategies used to mitigate effects)

2.2 Rivers and coasts

2.2.1 River systems

Content:	Further guidance
The features of rivers and their valleys	Characteristics of rivers (including width, depth, gradient, velocity) Characteristics of valleys (including shape in cross section) in upper, middle and lower courses

2.2.2 River processes and landforms

Content:	Further guidance
The processes of river erosion, transportation and deposition	Processes of vertical and lateral river erosion (including hydraulic action, corrasion/abrasion, attrition, corrosion/solution) Processes of river transportation (including traction, saltation, suspension, solution)
The formation of landforms resulting from river processes	Landforms resulting from river processes (including waterfalls, gorges, meanders, oxbow lakes, levées, floodplains, deltas)

2.2.3 Geographical investigation of rivers

Candidates should be able to:	Further guidance
Identify a suitable geographical question for investigation and outline the aims of the investigation	For example, how does a river change from source to mouth? Investigate one change such as bedload, volume, velocity, width and depth of the river channel, river features
Demonstrate an understanding of the different methods which can be used to collect primary and secondary data	Gather data from maps, photographs, published data. Measure bedload, volume, velocity, width, depth or observe river features at points from source to mouth.
Explain and demonstrate a variety of data presentation skills	Present findings in photographs, sketches, diagrams, graphs (bar, pie and scatter), tables and maps
Apply geographical knowledge and understanding to analyse and interpret data	Describe trends in the findings and any anomalies that do not fit the trends
Use evidence and geographical concepts to reach a conclusion	For any trends identified, explain them in terms of theories about rivers. How far do they agree with expectations and how can any exceptions be accounted for?
Evaluate the outcomes of a geographical investigation and make suggestions on how it could be improved	What problems in collecting data or presenting the data might occur? What steps could be taken to overcome these?

2.2.4 Coastal processes and landforms

Content:	Further guidance
The processes of coastal erosion, transportation and deposition	Processes of coastal erosion (including hydraulic action, corrasion/abrasion, attrition, corrosion/solution) Processes of coastal transportation (including longshore drift)
The formation of landforms resulting from coastal processes	Landforms resulting from coastal processes (including headlands and bays, caves, arches, stacks and stumps, cliffs and wave-cut platforms, beaches, spits and bars)

2.2.5 Flooding

Content:	Further guidance
The causes of river and coastal flooding	Physical factors (including excessive/monsoon rainfall, sedimentation, snowmelt, floodplain) and human factors (including deforestation, urbanisation, river modification) causing river flooding Factors causing coastal flooding (including typhoons, storm surges, severe storms, relief of coastal area)
The impact of flooding on people and the environment	Impacts of flooding (including on human lives and health, property, infrastructure, economy, food supply)
The strategies used to reduce the impact of river flooding and their effectiveness	Strategies (including modifying river channels, modifying catchment area, flood preparedness)

Case study required for 2.2.5 Flooding

• A river flood event and its impact on people and the environment	Study of one major river flooding event (including location, causes, impacts on people and the environment, management strategies used to mitigate effects)

2.3 Weathering, climate and natural vegetation

2.3.1 Weathering

Content:	Further guidance
Different types of weathering	Physical weathering, chemical weathering and biological weathering processes (including freeze–thaw, exfoliation, hydrolysis, carbonation, vegetation root action and animal burrowing)
The factors affecting the type and rate of weathering	Factors (including temperature, rainfall, geology, vegetation, relief)

2.3.2 Tropical equatorial and tropical monsoon climates

Content:	Further guidance
The distribution of tropical equatorial and tropical monsoon climates	Global distribution
The characteristics of tropical equatorial and tropical monsoon climates	Characteristics of both climates: temperature (including mean annual, maximum and minimum, range) and rainfall (including total annual, seasonal variation) Factors influencing the characteristics of both climates (including latitude, cloud cover, air pressure zones and winds, altitude) Climate graph showing the main characteristics of temperature and rainfall for each climate
The climate of Brunei	Climate features of Brunei (including temperature, rainfall, winds, relative humidity, cloud cover)

2.3.3 Typhoons

Content:	Further guidance
The causes of typhoons	Factors leading to the formation of typhoons (including latitudes 6–20° N and S of the Equator, tropical seas and oceans, winds, low pressure areas, high humidity)
The sequence of weather associated with typhoons	Weather associated with typhoons (including heavy rain, strong winds, dense clouds, thunder, lightning)
The impact of typhoons on people and the environment	Impact of typhoons (including flooding, storm surges, landslides, infrastructure) on human lives and health
Case study required for 2.3.3 Typhoons	
• A typhoon and its impact on people and the environment	Study of one major typhoon event (including location, causes, impacts on people and the environment, management strategies used to mitigate effects)

2.3.4 Natural vegetation of tropical rainforests and mangroves

Content:	Further guidance
The distribution of tropical rainforests and mangroves	Global distribution
The characteristics of tropical rainforests and mangroves	Characteristics of vegetation (including structure) and adaptations to the environment (including climate and soils)

2.3.5 The tropical rainforest as a resource

Content:	Further guidance
The value of the tropical rainforest as a resource	Socio-economic resource (including timber, food, medicine, tourism) Ecological resource (including reducing soil erosion, reducing flooding, acting as the 'green lungs of the Earth', regulating climate, providing natural habitats)
The causes and effects of deforestation of the tropical rainforest	Causes of deforestation (including agriculture, timber, settlement, transport networks, industry, dams, fires, illegal activities) Effects of deforestation (including loss of biodiversity, changes to soil quality, changes to water quality, changes to air quality, the enhanced greenhouse effect, global warming, extinction of species)
The strategies used to conserve and manage tropical rainforests and their success	Strategies (including reforestation, controlled and selective logging, protected areas and ecotourism, fire control, education)
Case study required for 2.3.5 The tropical rainforest as a resource	
• An area of tropical rainforest and how it is being managed	Study of one area of tropical rainforest (including location, characteristics of flora and fauna, resources used, threats to the rainforest, management strategies used to conserve the rainforest)

Theme 3: Economic development

The content listed is exhaustive except where the word 'including' is used. Where 'including' is used, candidates must study everything in the list but may also study other relevant aspects.

3.1 Industry

3.1.1 Classification of industry

Content:	Further guidance
The classification of industries into different sectors	Primary, secondary, tertiary, quaternary
Different employment structures and why they change over time	Differences in employment structures between LICs/ MICs (low and middle income countries) and HICs (high income countries) and reasons for changes in employment structures over time
The employment structure in Brunei	Reasons for the employment structure in Brunei

3.1.2 Location of secondary industry

Content:	Further guidance
The factors affecting the location of secondary industry	Factors affecting location (including raw materials, capital, energy, market, labour, land, transport, government policy, technology, Multinational corporations [MNCs])
The factors affecting the development of secondary industry in Brunei	Factors affecting the development of secondary industry in Brunei (including designated industrial sites for foreign direct investment [FDI], foreign ownership, tax incentives, legal and regulatory framework, infrastructure, Free Trade Agreements)
Case study required for 3.1.2 Location of secondary industry	
• An industrial zone or factory in Brunei	Study of one industrial zone or factory in Brunei (including location, nature of the industry, advantages of location for secondary industry)

3.1.3 Industry and the environment

Content:	Further guidance
The causes of industrial pollution	Causes of industrial pollution (including air, water, visual, noise)
The impact of industry on the environment	Impacts on the environment (including smog, acid rain, effluent)
The strategies used to reduce the impact of industry on the environment and their success	Strategies (including legislation, green taxes, incentives, pollution permits, pollution control boards, monitoring and reporting, cleaner fuels, cleaner production, emission control, recycling)

3.2 Energy

3.2.1 Energy production and consumption

Content:	Further guidance
World energy production and consumption	Energy sources (including coal, oil, natural gas, hydroelectric power [HEP], nuclear power, solar, wind, biofuels)
	Renewable and non-renewable energy sources
The reasons for the siting and development of different types of power stations	Factors influencing the siting of thermal power, HEP and nuclear power stations (including relief, communications, raw materials, water, waste, safety, access to electric grid/demand)
	Advantages and disadvantages for the development of different types of power station
The production of oil and natural gas in Brunei	Distribution of oil and natural gas fields
	Changes in oil and natural gas production over time
The importance of the oil and natural gas industry to Brunei	Benefits for the social and economic development of Brunei
	Future prospects of the oil and natural gas industry in Brunei in relation to diversification of the economy
Case study required for 3.2.1 Energy production and consumption	
• Seria oil refinery in Brunei	Study of the Seria oil refinery in Brunei (including location, nature of the industry, advantages of location for oil and natural gas production, benefits to the society and economy of Brunei)

3.2.2 Environmental impact of energy production, transportation and use

Content:	Further guidance
The consequences of the use of fossil fuels	Consequences of the use of fossil fuels (including carbon dioxide, air pollution, impact on health, visibility, depletion of resources, changes to the landscape, safety issues around transportation of fuels)
The formation of acid rain and its effects on the environment	Sources of pollutants which contribute to the formation of acid rain (including nitrogen oxides, sulfur dioxide)
	Effects of acid rain on the environment (including forests, soils, lakes, streams, buildings)
The impact of global warming on people and the environment	Sources of greenhouse gases (including water vapour, carbon dioxide, methane, nitrous oxide)
	Processes leading to the enhanced greenhouse effect and global warming
	Impact of global warming (including ice melting, sea level rise, changes in weather patterns, effects on flora and fauna)
	The concept of carbon footprint
The concept of carbon footprint and ways that it can be reduced	Ways that carbon footprint can be reduced (including 'Reduce, Reuse, Recycle', improving public transport, limiting air travel, carbon offsetting by tree planting)

3.2.3 Alternative sources of energy

Content:	Further guidance
Different types of alternative energy sources and how they are produced	Biofuels, geothermal, solar, tidal, wind
The growing significance of alternative energy sources	Reasons for changes in global energy use over time Comparison of the energy mix of different countries
The advantages and disadvantages of alternative energy sources for people and the environment	Advantages (including renewability, energy security, reduction in local environmental impact) Disadvantages (including locating, intermittent nature, scaling up, relocation of environmental impact)
How energy can be conserved at different scales	Energy conservation (including through public transport, the use of technology, education, planning)

Case study required for 3.2.3 Alternative sources of energy

• Tenaga Suria Brunei solar power plant	Study of the Tenaga Suria Brunei solar power plant (including location, nature of the industry, benefits to the society and economy of Brunei, role in alternative energy Research and Development [R&D])

3.3 Tourism

3.3.1 The growth of global tourism

Content:	Further guidance
The reasons for the growth of global tourism	Factors affecting the growth of global tourism (including disposable income, leisure time, education, development of attractions and facilities, accessibility, package holidays, advertising)
The advantages and disadvantages of the growth in global tourism for people and the environment	Advantages and disadvantages for people and the environments of HICs (high income countries) Advantages and disadvantages for people and the environments of LICs/MICs (low and middle income countries)

3.3.2 Sustainable tourism

Content:	Further guidance
The concept of sustainable tourism	Sustainable tourism in different contexts (including ecological, cultural) Sustainable tourism in different environments (including coastal, mountainous)
The need for strategies to encourage and develop sustainable tourism	Strategies (including limiting tourist numbers, raising awareness, biodiversity conservation and protection, private and public collaboration, eco-friendly practices, use of local labour and resources)
The success of sustainable management strategies used to manage environments and the input of different stakeholders to that success	Input from different stakeholders to the success of strategies (including governments, local councils or authorities, hoteliers, local business, travel agents, tourists, international conservation agencies, local communities)

3.3.3 Tourism in Brunei

Content:	Further guidance
The attractions of Brunei for tourists	Brunei's natural and cultural attractions
The need to promote tourism in Brunei and the methods used	Methods used to promote tourism for economic diversification (including familiarisation trips, trade shows, advertising, role of embassies abroad, role of Royal Brunei Airlines)
The impact of tourism on Brunei	Positive and negative impacts on the people, economy and environment of Brunei
The strategies used to control the impacts of tourism on Brunei	Strategies used to control the impact on the people of Brunei (including selective marketing, tourist code) Strategies used to control the impact on the environment of Brunei (including maintaining trails, enacting laws, increasing environmental awareness, eco-developments)

Case study required for 3.3.3 Tourism in Brunei

• An area in Brunei where tourism is important	Study of one tourist area in Brunei (including location, tourist attractions of the area, advantages and disadvantages of this type of tourism, importance of this tourist area to the local people and economy)

3.3.4 Geographical investigation of tourism

Candidates should be able to:	Further guidance
Identify a suitable geographical question for investigation and outline the aims of the investigation	For example, what is the nature of tourism in a particular area? Investigate one or two related aspects for example, numbers, origin, employment, economic impact, impact on culture, environmental effects, satisfaction of visitors, facilities related to tourism
Demonstrate an understanding of the different methods which can be used to collect primary and secondary data	Gather data from maps, photographs, published data. Collect information from samples of, for example, hotels, tourists, local people. Data collection using interviews, questionnaires, observation, counts
Explain and demonstrate a variety of data presentation skills	Present findings in photographs, sketches, diagrams, graphs (bar, pie and scatter), tables and maps
Apply geographical knowledge and understanding to analyse and interpret data	Describe patterns in the findings and any anomalies that do not fit the patterns
Use evidence and geographical concepts to reach a conclusion	For any patterns identified, explain them in terms of theories about tourists and tourism. How far do they agree with expectations and how can any exceptions be accounted for?
Evaluate the outcomes of a geographical investigation and make suggestions on how it could be improved	What problems in collecting data or presenting the data might occur? What steps could be taken to overcome these?

4 Details of the assessment

Paper 1 – Geographical Themes

Written paper, 2 hours, 75 marks

Candidates choose three questions, one from each theme.

Questions will test AO1, AO2 and AO3.

Questions are structured with short questions building to more open-ended questions requiring a longer response. They consist of a combination of resource-based tasks and free-response writing requiring place-specific information.

Candidates should be aware of the sub-marks for each part question. These are printed on the question paper. Candidates should use them as a guide to the amount of detail and length of response expected and to help them manage their time effectively.

For resource-based tasks, candidates should interpret and analyse the resource and use the data provided to illustrate their understanding of the concept being assessed.

Candidates are expected to know the location of the continents.

All the other information they need to answer a resource-based question is in the resource. No other knowledge is needed of the content of the resource.

Resources may be:

- photographs
- map extracts
- sketch maps
- drawings
- diagrams
- graphs
- text extracts
- statistics and tables of data
- satellite images
- GIS data.

Resource materials are chosen from different world areas. This means that candidates may be dealing with world areas they are not familiar with. You should make it clear to candidates that they do not need any regional knowledge to answer a resource-based question. All the information candidates need is provided and it is the application of their knowledge, understanding and skills which is being assessed. It is important that candidates are not influenced in their choice of question by the nature or location of a resource.

Case studies

Candidates should refer to suitable case studies in their responses.

You may choose a case study because it relates to:

- the local school area
- a particular example with which you are familiar
- a presentation in a newspaper/website/video/film, or a well-documented example in a textbook, etc.

A case study may also be based on a geographical investigation undertaken as part of preparation for Paper 2 – Geographical Skills.

The case studies should give candidates details which they can use to provide examples in their answers to questions on Paper 1.

Specific named case studies are only included where the case study must come from Brunei. This is to give you complete freedom in selecting examples which you feel are most suitable for your candidates.

Paper 2 – Geographical Skills

Written paper, 1 hour 45 minutes, 60 marks

Candidates must answer **all** questions.

Questions will test AO1, AO2 and AO3.

Questions are structured with gradients of difficulty and combine resource-based tasks and free-response writing.

The paper tests:

- skills of application, interpretation and analysis of geographical information, for example:
  - topographical maps
  - other maps
  - diagrams
  - graphs
  - tables of data
  - written material
  - photographs and pictorial material
- application of graphical and other techniques.

Equipment for Paper 2

Candidates must have in the examination room:

- a pencil, eraser, ruler, protractor and calculator
- access to a sheet of plain paper for measuring distance or for assisting with cross-sections on the large-scale map.

Section A: Mapwork skills

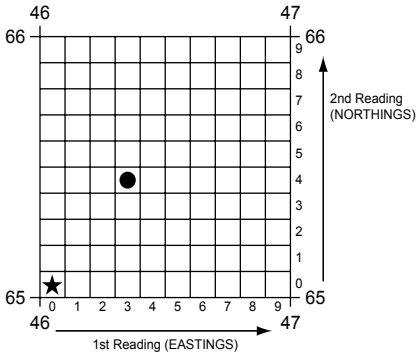
All answers to the mapwork question must be based on map evidence only. Candidates do not need any place-specific knowledge to answer the question in this section.

Question 1 will be based on a large-scale topographical map. The map extract provided will be on a scale of either 1:25 000 or 1:50 000 and will always contain a full key. This question will be worth 20 marks.

One third of the marks for Paper 2 are for the mapwork question. Candidates are asked to describe and analyse a large-scale map. This means that candidates must be proficient in map-reading and interpretation skills.

Candidates should be able to use a co-ordinate reference system and to give and read four-figure and six-figure grid references to locate places.

In this example, the four-figure grid reference for the dot is 4665 and the six-figure grid reference for the dot is 463654:



To give the six-figure grid reference, first identify the grid square, in this case 4665. The third figure is obtained by dividing the space between grid lines 46 and 47 into ten equal parts. Similarly, the sixth figure is obtained by a division of the gap between northings 65 and 66. This results in a grid reference of 463654 for the dot and 460650 for the star. Please note that the first tenth is 0 and the last tenth is 9 in the divided grid square.

Candidates should be able to give directions, both in terms of a 16-point compass (such as north, north-north east, north east, etc.) and as a bearing from grid north of one place from another. For this reason candidates must have protractors in the examination room.

Candidates should be able to measure horizontal distances. This is done most accurately by using a straight-edged piece of paper and the scale line. If the line to be measured is curved, divide the curve into straight sections and rotate the paper after each straight section to follow the next straight section. Finally, place the completed straight-edged piece of paper along the linear scale line on the map extract and read off the distance in kilometres/metres. This method avoids complicated mathematical calculations which can arise when rulers are used.

Candidates should also be able to:

- calculate differences in height by means of contour reading
- interpret, construct or complete a cross-section
- translate the scale of a feature by describing its size and shape in real terms
- use the key to identify features on the map
- draw inferences about the physical and human landscape by interpreting map evidence (including patterns of relief, drainage, settlement, communication and land use)
- identify basic landscape features (such as river valleys and uplands)

- give brief descriptions of basic landscape features using suitable geographical terms (such as ridge, plateau, scarp, flood plain) and simple adjectives showing an appreciation of their nature (such as broad, flat, steep-sided, deeply cut, gently sloping)
- recognise essential differences in density of drainage, stream patterns, gradients or sizes of streams in relation to the relief
- describe the physical features of coastlines and the shape and form of river channels as they are shown on large-scale maps
- describe variations in land use
- recognise and analyse patterns of settlement (dispersed, nucleated, linear)
- draw sketch maps illustrating these patterns
- interpret and describe features of urban morphology as they are shown on large-scale maps
- give reasons for the site and growth of individual settlements
- recognise communication networks in terms of their type and density in relation to physical and human features.

Section B: Geographical skills

There are two questions in this section.

Question 2 will be based on the geography of Brunei involving interpretation of resources as well as requiring place-specific knowledge. This question will be worth 10 marks.

Question 3 will be set on an international example and will involve interpretation of resources. The resources will include all the information needed to answer the question. No place-specific knowledge will be required. This question will be worth 10 marks.

Maps, diagrams, photographs, graphs, tables of data, written material

Questions will be set using some or all of these resources.

Candidates should be able to:

- Extract specified geographical information from maps, diagrams, photographs, graphs, tables of data and written material.
- Recognise patterns and deduce relationships.
- Describe variations and identify trends in information.

Maps, diagrams and photographs

Questions will be set using:

- various types of maps and diagrams for example: maps based on global and other scales, maps using flow lines, isoline maps, choropleth maps, and flow diagrams
- field sketches of physical and human landscapes to stimulate geographical description and annotation
- photographic and pictorial material (including field sketches). Some questions will include oblique photographs.

Candidates should be able to:

- identify and describe significant features of the human and physical landscape on maps, for example, natural vegetation, settlement layout, relief and drainage, transport networks, population distribution and population movements
- add specified detail on maps or other material provided to show that they can apply geographical knowledge and understanding
- use supporting material in conjunction with large-scale maps to identify, describe and analyse features and show that they can recognise patterns and deduce trends.

Graphs and tables of data

Various types of graphs may be used, for example: line graphs, bar graphs, divided bar graphs, histograms, scatter graphs, pie graphs and population pyramids.

Graphs may show, for example, temperature, birth rate, death rate, energy, rainfall distribution or river discharge.

Data tables may provide various types of information on physical phenomena, economic activities, population, settlement, agricultural and manufacturing output, etc.

Candidates should be able to:

- describe the broad features of the data provided, for example, population structure and use the pyramid to identify comparisons and contrasts between the male and female populations, the working and non-working population and the young-, middle- and old-age groups
- describe and analyse features and trends from the data provided
- plot information on graphs when axes and scales are provided
- suggest a suitable form of graphical representation for the data provided.

Written material

Questions may also use extracts from websites, books and newspapers, and candidates will need to show an understanding of the material presented.

Section C: Geographical investigation

Question 4 will be worth 20 marks.

Candidates do not need any place-specific knowledge to answer the question. Questions that require Knowledge with understanding (AO1) will be based on topics from 1.3, 2.2 or 3.3 (see section 3).

Candidates will be set a series of questions related to either Settlements and services, Rivers or Tourism. Questions will involve different stages of geographical investigation appropriate to the topics.

Candidates should study the principles of geographical investigations and show understanding of geographical enquiry. Some practical experience of fieldwork methodology, however limited, is desirable in preparation for this section. One approach is to introduce the appropriate enquiry skills and techniques relevant to geographical investigations during the teaching of a specific topic from the themes Settlements and services, Rivers or Tourism. For example while studying topic 2.2.1 (River systems), time could be spent discussing how key aspects of the form of rivers could be measured, the plotting of depth data and the calculation of cross-sectional area and discharge. You could introduce the skills required for questionnaires, counts and observations in either Settlements and services or Tourism wherever this is practical for the centre.

Enquiry skills for geographical investigations

Candidates should know about the stages involved in geographical enquiry, such as identifying aims and hypotheses/guiding questions, using enquiry skills to collect data, presentation techniques to display data, making analyses of data and reaching conclusions.

1 Identifying aims and hypotheses/guiding questions

Candidates should be familiar with hypotheses as statements and guiding questions that form the basis of geographical investigation. These investigate a geographical concept, for example, 'The impact of tourism on an attraction is more positive than negative'. Collecting relevant data, analysis, and drawing conclusions using the evidence can test these.

2 Enquiry skills to collect data

Questions will test knowledge and application of the methodology used in the following range of enquiry skills to collect data.

Pilot study

A pilot study is important to ensure the data collection methods will work.

Questionnaires

Questionnaires can be oral or written to gain information from an individual or a group of individuals.

Questionnaires can be used when studying either Settlements and services or Tourism.

Candidates should be aware of:

- factors influencing the successful design of questionnaires, for example:
  - layout
  - format of questions
  - appropriate wording of questions
  - number of questions
- the practical considerations involved in conducting a questionnaire, for example:
  - sampling methods
  - pilot survey
  - location of survey.

Observation

Examples of using observations to collect data include the recording of land use in an urban area or observations of river features. Candidates can use maps, recording sheets, field sketches and annotated photographs to record their observations.

Counts

Examples of counts are pedestrian and traffic counts. Candidates should be aware of suitable methods for recording counts, including the layout of recording sheets, instructions and the information required to identify the sheet following the count (time, date, location and name of recorder).

Measurement

Candidates should be aware that when they are recording measurements, it is important to plan the layout of the recording sheet, the location of instruments and the sampling methods used to provide reliable data. They should know what measurement equipment is required for the investigation. They should be familiar with:

- river measurements of channel width, depth, velocity and the size and shape of bedload
- measurement techniques associated with human fieldwork such as survey strategies and pedestrian/traffic counts.

3 Data-presentation techniques

Candidates need to know about the presentation techniques that can be used to present data. These include various types of graphs, maps and diagrams, for example:

- line graphs
- divided bar graphs
- pie graphs
- dispersion graphs
- isoline maps
- kite diagrams
- field sketches
- bar graphs
- histograms
- scatter graphs (with line of best fit)
- choropleth maps
- flow diagrams
- photographs

4 Analysis

Candidates should be able to describe the patterns in data presented in graphs and tables of results. Questions often require candidates to refer to relevant geographical knowledge and understanding when they are interpreting data.

5 Making conclusions

Using the evidence from the data, candidates should be able to make judgements on the validity of the original hypothesis or aims of the investigation. They must refer to the reliability of the data collected and give a critical evaluation of the data collection methods chosen.

Command words

The table below includes command words used in the assessment for this syllabus. The use of the command word will relate to the subject context.

Command word	What it means
Calculate	work out from given facts, figures or information
Compare	identify/comment on similarities and/or differences
Define	give precise meaning
Describe	state the points of a topic / give characteristics and main features
Devise	create a questionnaire or present other information according to specific requirements
Estimate	use judgement to give a unit value to a distance or area
Explain	set out purposes or reasons / make the relationships between things evident / provide why and/or how and support with relevant evidence
Give	produce an answer from a given source or recall/memory
Identify	name/select/recognise
Justify	support a case with evidence/argument
Locate	indicate the position of a place, feature or entity from/on a resource
Plan	create a method to obtain or present certain information (such as a questionnaire) according to specific requirements
Predict	suggest what may happen based on available information
Sketch	make a simple freehand drawing showing the key features, taking care over proportions
State	express in clear terms
Suggest	apply knowledge and understanding to situations where there are a range of valid responses in order to make proposals

Phrases such as 'How far do you agree…..?' and 'To what extent…?' may also be seen in the assessment for this syllabus.

5 What else you need to know

This section is an overview of other information you need to know about this syllabus. It will help to share the administrative information with your exams officer so they know when you will need their support.

Before you start

Previous study

We recommend that learners starting this course should have studied a Geography curriculum such as the Cambridge Lower Secondary programme or equivalent national educational framework.

Guided learning hours

We design Cambridge O Level syllabuses based on learners having about 130 guided learning hours for each subject during the course but this is for guidance only. The number of hours a learner needs to achieve the qualification may vary according to local practice and their previous experience of the subject.

Availability

You can enter candidates in the June and November exam series. It is available to centres in Brunei only.

Check you are using the syllabus for the year the candidate is taking the exam.

Private candidates can enter for this syllabus.

Combining with other syllabuses

Candidates can take this syllabus alongside other Cambridge International syllabuses in a single exam series. The only exceptions are:

- Cambridge IGCSE™ Geography (0460)
- Cambridge IGCSE (9–1) Geography (0976)
- Cambridge O Level Geography (2217)
- syllabuses with the same title at the same level.

Cambridge O Level, Cambridge IGCSE and Cambridge IGCSE (9–1) syllabuses are at the same level.

Making entries

Exam administration

To keep our exams secure, we produce question papers for different areas of the world, known as administrative zones. We allocate all Cambridge schools to one administrative zone determined by their location. Each zone has a specific timetable. Some of our syllabuses offer candidates different assessment options. An entry option code is used to identify the components the candidate will take relevant to the administrative zone and the available assessment options.

Retakes

Candidates can retake the whole qualification as many times as they want to. This is a linear qualification so candidates cannot re-sit individual components.

Equality and inclusion

We have taken great care to avoid bias of any kind in the preparation of this syllabus and related assessment materials. In compliance with the UK Equality Act (2010) we have designed this qualification to avoid any direct and indirect discrimination.

The standard assessment arrangements may present unnecessary barriers for candidates with disabilities or learning difficulties. We can put arrangements in place for these candidates to enable them to access the assessments and receive recognition of their attainment. We do not agree access arrangements if they give candidates an unfair advantage over others or if they compromise the standards being assessed.

Candidates who cannot access the assessment of any component may be able to receive an award based on the parts of the assessment they have completed.

Information on access arrangements is in the *Cambridge Handbook* at **www.cambridgeinternational.org/eoguide**

Language

This syllabus and the related assessment materials are available in English only.

After the exam

Grading and reporting

Grades A*, A, B, C, D or E indicate the standard a candidate achieved at Cambridge O Level.

A* is the highest and E is the lowest. 'Ungraded' means that the candidate's performance did not meet the standard required for grade E. 'Ungraded' is reported on the statement of results but not on the certificate. In specific circumstances your candidates may see one of the following letters on their statement of results:

- Q (pending)
- X (no result)
- Y (to be issued).

These letters do not appear on the certificate.

How students and teachers can use the grades

Assessment at Cambridge O Level has two purposes:

- to measure learning and achievement

  The assessment:
  - confirms achievement and performance in relation to the knowledge, understanding and skills specified in the syllabus, to the levels described in the grade descriptions.
- to show likely future success

  The outcomes:
  - help predict which students are well prepared for a particular course or career and/or which students are more likely to be successful
  - help students choose the most suitable course or career.

Cambridge Assessment International Education
The Triangle Building, Shaftesbury Road, Cambridge, CB2 8EA, United Kingdom
Tel: +44 (0)1223 553554 Fax: +44 (0)1223 553558
Email: info@cambridgeinternational.org www.cambridgeinternational.org